
RI WETLANDS BIOMONITORING
NOTES FROM DEM STAFF MEETING JUNE 15, 2004

TO: RI Wetlands Biomonitoring Workgroup

FROM: Deb Pelton

SUBJECT: 6/15/04 DEM Staff Meeting – Introduction to Wetlands Biomonitoring Project and request for staff input regarding possible management uses of wetland data needs and priorities.

DATE: 6/22/04

INTRODUCTION:

Deb gave an overview of wetland biomonitoring in the form of a PowerPoint presentation. Slides available if you're interested in seeing them.

Presentation included:

1. Basic information about what a bioassessment is and why it's a valuable tool for monitoring the environment. Approach and methods originally developed for streams and lakes. States now developing and adapting methods for wetlands.
2. An overview of the 3-tiered approach to wetland assessment recommended by EPA:
 - a. Level 1 is a Landscape Assessment
 - b. Level 2 is a Rapid Field Assessment
 - c. Level 3 is a Site Assessment in which an assemblage (vegetation, invertebrates, amphibians, birds, algae) is collected and analyzed to generate indices of biological integrity - a numerical and descriptive value that indicates ecological health as a function of human disturbance. All levels of assessment provide valuable information, and are intended to be used together, if possible. Level 3 work validates level 2 work, and both validate level 1 assessments.
3. Several other states are also developing wetland monitoring plans and methods. Some states are much further along and can provide excellent examples for RI to follow.
4. Rather than start with pilot projects in the field, RI wanted to generate a plan first. Deb was hired with EPA grant money (104b(3) funds) to work on this plan.
5. The purpose of the meeting was to solicit input from DEM staff to identify specific wetland monitoring data needs for RI. As we develop the plan, we want to ensure that data are useful to wetland regulatory and non-regulatory decision-makers.
6. An initial draft list of possible management uses for wetland monitoring data was generated based on feedback Deb and Carol received prior to the meeting. This list was passed out as a handout and sent electronically in the follow-up email.

During the meeting, additional data needs were suggested. The revised list is below. We also asked staff to recommend priorities for the list. A few prioritized lists were returned. We would like to hear from others if they'd like to weigh in on what they consider priorities for wetland monitoring data.

DISCUSSION FOLLOWING PRESENTATION:

Staff raised several valuable concerns, ideas, and points. Additional management uses for wetland monitoring data are included in list below. Additional comments are added here in the form of bullet points:

- Concern about loss of groundwater recharge. Some analysis indicates that 10% paved/imperious surface in watershed indicates that the watershed is degraded.
- Use of data can include condition monitoring for groundwater withdrawals and success of restoration/creation wetland projects.

- May take 5 to 10 years to see impacts of groundwater withdrawals on a wetland... vegetation community takes a while to change.
- Need for guidance/protocol on what to monitor for in permitted projects. Focus on data that will give DEM the information it needs, rather than asking people to monitor everything.
- Forest Service has been monitoring forests for years on a rotating schedule. Several monitored forests in wetland areas – could provide valuable data. Wetland boundaries not specific, public/private property... need to talk more with Cathy Sparks about available data and possible uses for wetland monitoring/site selection.
- Maps need to be updated for RI, especially if we're going to use a level 1 analysis. Is Cowardin classification system enough to classify wetlands in RI?
- Level 1 analysis is good for cumulative impacts.
- For better permitting decisions, need level 3 (site-specific, assemblage) information. Should we focus on common wetlands – red maple swamps - or start with sensitive wetlands – bogs, fens, cedar swamps?
- Test metrics that have already been shown to work in other states.
- Could use existing information in the literature to get at tier 3 indicators.
- Suggestion to establish permanent biomonitoring plots in red maple swamps and others to develop a gradient of human disturbance and guide decisions.
- Suggestion to use stream/river information already developed and tie to impact assessment in RI... data, condition, impact assessment.
- When considering metrics from level 3 analysis, one metric such as taxa richness is not enough. For example, a high species richness does not necessarily indicate a healthy wetland.
- RI needs baseline data from undisturbed wetlands.
- Want to be able to understand natural versus human-caused changes to wetlands.
- Question about the goal of a wetland monitoring plan... what is the goal? Goal is to determine overall effectiveness of wetland protection programs and improve if needed.
 - EPA must demonstrate improved wetland condition in 5 states by 2008. RI may be one of those 5 states. Looking at landscape level tool for this assessment.
- Important to assess impacts of land use changes on wetlands, especially effects of residential land use, which is majority of permitting projects.
- Want to know how runoff and stormwater impact wetland biota
- Want to be able to measure incremental changes to red maple swamps... indirect disturbances such as noise, light, etc... difficult to assess!
- Target protection of unique areas.
- Manage for different uses of wetlands such as impoundments for waterfowl.
- Suggestion to start assessing wetlands in 1 watershed initially to test methods, then add in additional watersheds – perhaps a rotating watershed schedule.

NOTE: Please contact me if there were any points of discussion you recall that I have not included here.

REVISED LIST OF POSSIBLE MANAGEMENT USES FOR WETLAND MONITORING DATA:

WETLAND BIOMONITORING IN RI UPDATED LIST OF POSSIBLE MANAGEMENT USES FOR DATA

Questions for DEM Staff:

1. What do you think the data needs are for freshwater wetland monitoring in RI?
2. What information about wetland ecological condition might help you do your job and help us improve wetland protection and management?

Why Monitor Wetlands in Rhode Island?

Here are some ideas we've heard thus far about possible management applications of wetland monitoring data in RI. This list now includes the ideas generated from the DEM staff on 6/15/04:

- baseline monitoring for long-term trends and decision-making
 - basic "screening" to ID problems & define reference sites
 - monitor compliance for mitigation wetlands, including creation and restoration
 - eventual development and support of water quality standards for wetlands
 - understand emerging issues that can cause economic impacts (ex. invasive spp)
 - diagnose the type of human stress impairing a wetland
 - assess cumulative impacts to wetlands by monitoring biological communities
 - monitor and assess the impacts to wetlands due to loss of protective buffers
 - monitor and assess impacts due to water withdrawals (community wells, golf course water uses)
 - prioritize wetlands for open space protection
 - use data to help w/"predictability" of permit application, support permitting decisions
 - monitor impacts of recreation projects to wetlands
 - assess impacts of sedimentation from highways to wetland biological communities
 - determine impacts of groundwater withdrawal and loss of recharge on wetlands
 - provide guidance on what permitted projects should monitor in wetlands. now being asked to monitor everything. find out what information is required to get DEM permitting people what they need to know.
 - assess impacts of land use changes on wetlands, especially residential uses (most of permitted projects)
 - assess impacts of stormwater runoff to wetland communities. also assess impacts of stormwater sent to another watershed, resulting in loss of recharge from originating watershed
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Help us prioritize this list!

The following have been suggested as priorities (either 1, 2, or 3) thus far (only a few staff have given us their "votes"):

- monitor and assess the impacts to wetlands due to loss of protective buffers
- assess cumulative impacts to wetlands by monitoring biological communities
- baseline monitoring for long-term trends and decision making/basic "screening to ID problems & define reference sites
- eventual development and support of water quality stds for wetlands

- monitor and assess impacts due to water withdrawals (community wells, other..)
- prioritize wetlands for open space protection

Do you agree? Is there anything else we should consider?

NEXT STEPS:

We will seek input from wetland decision-makers & researchers outside of DEM in mid-July and start to draft the plan for biomonitoring of wetlands in RI. We'll keep you informed of our progress and seek additional input along the way!

Thanks so much for your participation!